EXHIBIT 4

MAO DECLARATION

OPPOSITION TO GOOGLE'S MOTION TO EXCLUDE LASINSKI

DOCUMENT SOUGHT TO BE SEALED

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   UNITED STATES DISTRICT COURT

2   NORTHERN DISTRICT OF CALIFORNIA

3   SAN FRANCISCO

4   --oOo--

5   ANIBAL RODRIGUEZ, et al.,

       individually and on behalf of

6   all other similarly situated,

7   Plaintiffs,

8   vs.   Case No.

                                        3:20-CV-04688

9   GOOGLE LLC, et al.,

10   Defendants.

       _____/

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13   HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

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16   VIDEO-RECORDED DEPOSITION OF JOHN R. BLACK, Ph.D.

17   SAN FRANCISCO, CALIFORNIA

18   FRIDAY, JULY 14, 2023

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22

23   Reported by:

24   Anrae Wimberley, CSR No. 7778

25   Job No. 5996166

                                           Page 1

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14   HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

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16   Transcript of video-recorded deposition

17   of JOHN R. BLACK, Ph.D., taken at Boies Schiller

18   Flexner LLP, 44 Montgomery Street, 41st Floor,

19   San Francisco, California 94104 and via Zoom

20   videoconference, beginning at 9:37 a.m. PST and

21   ending at 8:56 p.m. PST on Friday, July 14, 2023,

22   before Anrae Wimberley, Certified Shorthand Reporter

23   No. 7778.

24

25

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1   Sometimes they're called "self-reporting   10:36:16

2 networks." That's what AppsFlyer calls them. And

3 more broadly, they're called "SAN" for

4 self-attributing network.

5   Google is one such network.   10:36:24

6   Q.   What exactly distinguishes one network

7 from another in terms of whether it's

8 self-attributing or not?

9   How would you describe that to somebody at

10 a cocktail party?   10:36:38

11   A.   Well, this doesn't feel like a cocktail

12 party, but maybe I'm just --

13   MR. SANTACANA: It's a boring cocktail party.

14   THE WITNESS: I'm a lot more careful in

15 deposition since I'm under oath, of course.   10:36:52

16 BY MR. MAO:

17   Q.   Of course.

18   A.   The main distinction I would draw is if a

19 network is willing to export to a third party all of

20 those first steps of people getting ad impressions   10:37:05

21 or ad clicks and allowing a third party to do the

22 marriage of the conversion events to those ad

23 impression, ad clicks.

24   As I've said, Google insists that it do it

25 itself, and it doesn't allow a third party to have   10:37:23

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1   the information it would need to do that attribution   10:37:26

2   because Google is an SAN.

3   Q.   But what information would you need in

4   order to do attribution?

5   MR. SANTACANA: Vague and compound.   10:37:36

6   THE WITNESS: At a minimum, you would need a

7   left column and a right column to do the matching.

8   If you're a third party and you've

9   convinced a developer to integrate your SDK, like

10   AppsFlyer, that's half of what you need.   You've got   10:37:54

11   the conversions now that you can catalog on your

12   back end.

13   But you also need the ad network to

14   provide you with all of the ads that it supplied

15   that users may have interacted with so you can try   10:38:10

16   and figure out where those attributions occur.

17   BY MR. MAO:

18   Q.   Do you know why Google does not allow

19   third parties to do attribution, that half -- or,

20   sorry, the -- that half of what you just described?   10:38:22

21   You put on one hand conversions, you put

22   on the other side attribution, why does Google not

23   allow third parties to do attributions?

24   MR. SANTACANA: Calls for speculation.

25   THE WITNESS: I would, in fact, have to guess a   10:38:39

                                                          Page 34

1   little bit, but I think maybe a privacy concern   10:38:41

2   exporting all that information out to other

3   companies.

4   Also, Google has a vested interest in

5   making sure things work, and they may not want to   10:38:54

6   trust some other company to provide an essential cog

7   in the entire machine that is, you know, the online

8   economy. They prefer to use their best engineers to

9   make sure it works properly and robustly and

10   efficiently and accurately.   10:39:15

11   BY MR. MAO:

12   Q.   So when you said the first thing, a

13   privacy concern, what type of data that would be or

14   would need to be transferred in order to complete

15   attribution, could there be privacy concerns?   10:39:25

16   MR. SANTACANA: Calls for speculation.

17   THE WITNESS: Well, as I indicated before,

18   Google would have to be willing to export the entire

19   record of all of the ad interactions that had

20   occurred on its network to any partner that was a   10:39:43

21   third party that wanted to do the attribution.

22   And I didn't investigate in my report, you

23   know, what exactly would be contained and what are

24   the privacy risks involved, and, you know, I didn't

25   try to opine on the risk factor there.   10:40:01

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1   determine your GAIA, G-A-I-A, ID, then it can look   05:25:34

2   up your sWAA and WAA settings and honor those

3   settings.

4   Q.   I'm going on to page 31, which goes into

5   page 32 on paragraph 82. Let me know when you're   05:25:56

6   there.

7   A.   I'm there.

8   Q.   I see there you're making a difference

9   between identifiers in a pseudonymous log -- and

10   this is following footnote 98, okay? Do you see   05:26:12

11   that section there where you're talking about

12   pseudonymous logs matched to identities or not?

13   A.   I see that paragraph, yes.

14   Q.   Right here? Okay. Yeah, yeah, this top

15   section?   05:26:25

16   A.   Yeah.

17   Q.   Although the ID may be a pseudonymous

18   identifier, when the pseudonymous identifier is

19   being transmitted to Google, does Google have any

20   trouble locating that device in the ethernet?   05:26:47

21   MR. SANTACANA: Did you say ethernet?

22   MR. MAO: Internet. Sorry, Internet.

23   THE WITNESS: It's late.

24   MR. MAO: Yeah.

25   MR. SANTACANA: Vague. Vague. Sorry, just   05:27:03

1   really vague.   05:27:08

2   BY MR. MAO:

3   Q.   In other words, I know you're talking

4   about disassociating a person from the pseudonymous

5   ID, but my question is, doesn't the pseudonymous ID   05:27:16

6   still allow Google to locate the device?

7   MR. SANTACANA: Vague.

8   BY MR. MAO:

9   Q.   Especially when, for example, an ad is

10   being served?   05:27:25

11   MR. SANTACANA: Vague.

12   THE WITNESS: So are we talking about a

13   specific pseudonymous identifier or just any

14   pseudonymous identifier?

15   BY MR. MAO: 05:27:45

16   Q.   The pseudonymous identifiers that Google

17   uses, for example, to log impressions of an ad at

18   the time in which it was served.

19   A.   So in that specific instance, my

20   understanding is that, let's say AdMob is at the   05:28:10

21   root of this process and it's running on a mobile

22   device.   Its code will generate an ad request, and

23   that ad request will reach out to the Google ad

24   network and form a connection.   The ad network

25   decides what ad to send back, and it sends it over   05:28:28

                                                        Page 216

1   that connection and at least in some cases logs the   05:28:34

2   ad ID of the requesting phone so that it knows that

3   it's serving this ad to this device at this time.

4   But it doesn't need to, like, locate based

5   on ad ID the phone. There's already connection   05:28:51

6   because the phone reached out to the ad network, not

7   the other way around.

8   Q.   But if it needs to reach back to that

9   impression to where that -- to the specific app on a

10   specific phone, right, where that impression was   05:29:04

11   delivered, does Google have any trouble doing that?

12   MR. SANTACANA: Vague, calls for speculation or

13   incomplete hypothetical.

14   THE WITNESS: It's hard to say because normally

15   the model is that devices reach out to servers, they   05:29:26

16   initiate requests. There's this idea of push

17   notification, but even there the device is

18   establishing a connection with a notification server

19   and that server is pushing notifications to the

20   device.   05:29:45

21   It's strange and unusual to conceive of

22   servers reaching out to devices, trying to locate

23   devices.

24   BY MR. MAO:

25   Q.   Ah. This is helpful. I'm glad we're   05:29:53

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1   having this discussion.   05:29:56

2   So AdMob -- because I take hint from your

3   counsel that we use something very specific. For

4   AdMob, as these ads are being auctioned in real time

5   and delivered in real time -- right? We talked   05:30:10

6   about this before. The AdMob platform allows for ad

7   auctions in real time; right? Your words.

8   So what I'm trying to understand is -- I

9   think you and I agree that the ad network pushes an

10   ad to the device, to the AdMob, once a winner is   05:30:26

11   located; isn't that true? I.e., the advertiser ad

12   server pushes an ad creative on to AdMob once a

13   winner has been determined in the ad auction; isn't

14   that correct?

15   A.   I think that the flow works as follows.   05:30:50

16   Q.   Please.

17   A.   The app is running on the publisher's app,

18   right, the app is running on this phone. AdMob is

19   part of it. Opportunity to display an advertisement

20   occurs. AdMob is called and told, Generate an ad   05:31:04

21   request. I have this space -- this space available,

22   right.

23   That causes a request to go out to the ad

24   network and say, This resource, this surface is

25   available to display an ad. And then in real time   05:31:22

                                                           Page 218

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1   there's actually an auction that takes place to see   05:31:27

2   whose ad is actually going to be shown.

3   Obviously this can't take a long time

4   because their user is sitting there waiting for

5   responsiveness from the app. And so that happens   05:31:39

6   quickly and then the network serves the ad back to

7   the phone and the ad is displayed.

8   But the initiator of that connection is

9   the device, the phone, it's not that servers reach

10   out to you unbidden. And Amazon doesn't pop up, you   05:31:55

11   know, in your browser and say, Buy a book. You have

12   to initiate that transaction, right, you have to go

13   to Amazon first in order to initiate an interaction.

14   Q.   Right. But the ad creative still has to

15   be pushed by the server. I know you're saying in   05:32:12

16   the usual model the app is calling for something,

17   but for AdMob, once the auction is run and a winner

18   is determined in the auction, doesn't Google know

19   where to deliver precisely that ad request?

20   A.   Because Google is a server, it has   05:32:38

21   connections established already with advertisers.

22   And it receives this inbound connection from some

23   device saying, This is an ad request.

24   There wouldn't be time for it to, like, go

25   out and start cold-calling and saying, I have this   05:32:58

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1   opportunity and, you know, establishing a   05:33:02

2   connection, which could take 100 milliseconds. I

3   mean, this has to be very responsive. I think they

4   have something like 10 milliseconds to enter a bid.

5   So these are preestablished connections.   05:33:13

6   These are not push notifications from a server to

7   advertising clients. I don't think that would work.

8   It would be too slow.

9   So these connections -- I can go into

10   details why servers cannot make outbound connections   05:33:26

11   to phones or devices. There's a technological

12   impediment that would make it not work. It really

13   does have to be that devices have to make the

14   inbound connection to the server for the Internet

15   technology to work properly.   05:33:42

16   Going back to your original question

17   several minutes ago, I haven't seen anything in

18   evidence that would allow Google, just given a

19   pseudonymous identifier, to say, I know how to

20   locate this user or this device out there in the   05:34:00

21   world given just this pseudonymous ID.

22   Q.   Well, right, right, right. But what I'm

23   saying is that the AdMob SDK is making the call to

24   the Google server; right? The Google SDK is making

25   a call to the Google server to deliver the ad at its   05:34:14

1   precise location; isn't that correct?   05:34:17

2   MR. SANTACANA: Vague.

3   Go ahead.

4   THE WITNESS: It is true that the AdMob SDK is,

5   using Internet routing and a known IP address,   05:34:24

6   finding a Google ad network server, establishing a

7   TCP/IP connection, so now it's two ways, and saying,

8   I would like an ad and here are the constraints.

9   The ad network is figuring out which ad to

10   deliver using that existing connection.   So it   05:34:46

11   doesn't hang up the phone, get an ad and then say,

12   Oh, my gosh, how am I going to find that device that

13   called me a minute ago?   It uses the existing

14   connection and responds back with that.

15   BY MR. MAO: 05:35:00

16   Q.   Right, right.   And, like you said, this is

17   happening in real time.   So I want to give the

18   example just to make sure I understand, okay?

19   Your argument, or at least the example

20   you've given is, when WAA is off -- oh, sorry, when   05:35:09

21   WAA and sWAA are off, Google is using pseudonymous

22   identifiers, including for ad -- not app, ad

23   conversions in attribution, agreed?

24   A.   When sWAA and WAA are off, conversions

25   and attribution are done using pseudonymous IDs by   05:35:36

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1	the ad network.	05:35:40
2	Q. Right. So now I want to take this SDK	
3	module of AbMob, okay, very specifically, just	
4	working within your example. Just want to make sure	
5	I understand what happens when WAA and sWAA are	05:35:51
6	off.	
7	The SDK, like you said, say, I have the	
8	following, I don't know, mobile URL, this is the	
9	context, right, get me an ad delivered in real time	
10	for this specific mobile URL. Okay?	05:36:12
11	Do we agree that that is being done with a	
12	pseudonymous identifier when WAA and sWAA are off?	
13	A. Okay. I'm going to say something and I'm	
14	going to try to be super clear because --	
15	Q. Sure.	05:36:28
16	A. -- this is complicated.	
17	But when you have AdMob, at least now, you	
18	also have GA4F essentially, right, at the same time.	
19	And so if the GA4F analytics code is being run, then	
20	you're sending that information to Google with	05:36:41
21	pseudonymous IDs.	
22	Q. Right, okay. Yeah.	
23	A. But that's different from asking AdMob to	
24	deliver an ad via an ad request. And you could have	
25	an app that's both requesting ads and giving	05:36:55